MI SHA NEWS

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PROACTIVE PARTNERING

UAW, Ford, Visteon & MIOSHA Form Partnership to Improve Workplace Safety

This March the United Auto Workers Union (UAW), Ford Motor Company, Visteon Corporation and the Michigan Occupational Safety and Health Administration (MIOSHA) signed a groundbreaking partnership to help improve worker health and safety at Ford and Visteon facilities in Michigan.

All partners are committed to providing employees in the 17 Ford and eight Visteon plants in Michigan a healthful and safe workplace. The partnership's primary goals are not only to reduce injuries and illnesses at each location, but to create a proactive safety and health culture, and a non-adversarial relationship that stresses cooperation.

Federal OSHA signed a formal partnership agreement with the UAW, Ford and Visteon on Nov. 14, 2000. That agreement covers 21 Ford and two Visteon plants in federal OSHA states, and addresses hazards specific to the automotive industry.

"The safety and health of the American worker is our top priority," said **John L. Henshaw**, Assistant Secretary of Labor for Occupational Safety and Health. "Working together is critical, and the expansion of this partnership will strengthen worker safety and health at Michigan Ford and Visteon sites."

The partners are constructing this partnership based on mutual respect and trust that will leverage the resources of all the parties through the anticipation, identification, evaluation and control of health and safety hazards at Ford and Visteon locations in Michigan, and thereby reduce worker injuries and illnesses.

Continuous Safety & Health Improvement

"This agreement is a proactive effort to further promote health and safety in our plants. The partnership provides an opportunity for each party to benefit from the collective knowledge, experiences and sharing of information to maintain a working environment free of exposure to hazards," said **James Patton**, UAW Co-Chair, National Joint Committee on Health and Safety. "With this partnership, we also have the opportunity to focus attention and greater recognition to issues of specific concern at each plant."

Sharing safety and health information between all partners will

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After signing the partnership agreement, Shammel Rushwin, Ford Vice President, North American Business Operations, and James Patton, UAW Co-Chair, National Joint Committee on Health and Safety, shake hands in front of the Thunderbird Assembly Line at the Wixom Assembly Line at the Wixom Assembly Plant.

In This Issue

CIS

Serving Michigan . . . Serving You
Consumer and Industry Services

From the Bureau Director's Desk

Historic MIOSHA Partnership with UAW, Ford and Visteon

By: Douglas R. Earle, Director
Bureau of Safety & Regulation

This March, MIOSHA embarked on a historic partnership with the United Auto Workers of America (UAW), Ford Motor Co, and Visteon Corp., to improve worker safety and health at their Michigan facilities. This innovative partnership provides a new way for MIOSHA to work with large Michigan employers–and to impact the safety and health of thousands of Michigan workers. On Nov. 14, 2000, federal OSHA signed a similar partnership agreement with the UAW, Ford and Visteon.

It has been almost three years since **Henry Lick**, the Director of Occupational Health for Ford (now retired), and **Frank Mirer**, the Director of Safety and Health for the UAW, came to us with an idea to form a partnership between MIOSHA and OSHA within the context of our regulatory relationship. **Mike Connors**, OSHA Region V Administrator in Chicago, and **Davis Layne**, then OSHA Regional Administrator in Atlanta (now Deputy Assistant Secretary for OSHA), and I were all skeptical about an designing a partnership with an individual employer within the regulatory context of our respective laws.

Although there have been numerous OSHA/MIOSHA partnerships in the last few years, most have been with associations and/or unions, not with individual employers. These types of partnerships are not necessarily in potential conflict with our obligations regarding assuring equal protection of workers and, the protection of the due process rights of the employers. Workers have the right to a safe and healthy work environment regardless of whether they work for a large employer or small. Moreover, employers, both large and small, must have their due process rights protected under any governmental program.

As we met over an extended period, we determined that such a partnership was ultimately possible. I became a true believer, not only in the potential of this particular partnership, but also as a prototype for partnerships with other employers. I began to see how we could develop a system that would enhance worker safety and health, as well as remain compatible with our regulatory responsibilities under the MIOSHA and OSHA laws.

I will leave the details of the partnership to our lead story in this edition of the MIOSHA News. I want to speak briefly in broader terms about the partnership concept and the context in which we find ourselves developing them. As a legal staff member of the U.S. Department of Labor, Office of the Solicitor, I helped to draft the original OSH Act. Since then I have worked at the state and national levels with the OSHA program in many different capacities.

Throughout this period I believe that OSHA and MIOSHA have made a significant contributions to worker safety and health–and the laws can continue to serve as the vehicle for occupational safety and health in the 21st century. To do so, however, we have to recognize that many of the assumptions that were made during the development of OSHA have changed in the world of work. Structures, technology, and organizational thinking have changed dramatically in how we do business. It is time that we look creatively at our responsibility to facilitate the improvement of worker safety and health in a manner that deals effectively with the changes that have occurred around us.

Only time will tell if the UAW/Ford/Visteon/MIOSHA partnership can become a valuable model to be replicated in the large employers' complex environment. It may not be the final answer for how government will relate to large employers in the future–but it's a place to start. I believe this could turn out to be one of the most significant efforts undertaken by OSHA and certainly by MIOSHA, since the respective laws were enacted.

Government's role must remain for the large employer, as well as the small employer, one of facilitation in helping the employers and the workers maintain a safe and healthy workplace. We must come up with a variety of incentives that fit the customers of our program, a method of working with them that meets their needs and yet continues to ensure the best protection for employees and the due process rights of employers. We must continue to work as the catalyst that will help achieve the ultimate aim of improving safety and health for Michigan's working men and women.

Goodbye to the Wage & Hour Division

Since 1992, the Wage & Hour Division has been a part of BSR. During that time the program has reduced and/or eliminated nearly the entire backlog of pending contested cases, eliminated the backlog in issuing initial determination orders on wage complaints, and otherwise streamlined a number of its operations. Executive Order, 2002-1, which becomes effective on April 7, 2002, transfers the Wage & Hour Division and its programs to the new Bureau of Worker's and Unemployment Compensation.

As a part of this new bureau, I am confident that the division, under Bill Strong's effective management and the commitment of the excellent staff, will continue to perform in an exceptional manner on behalf of the public in Michigan. I will miss not only Bill Strong, but all of the people that I had an opportunity to work with in the employment standards programs. They have done a superb job for the wage earners and employers in Michigan. They should be proud of what they have done–I know I'm very proud of them.

Douglas R Earle

Fall Protection

Ambassador Bridge Accidents Underscore the Need for Fall Protection

By: Rick Mee, Chief
Construction Safety Division

Two recent high-profile scaffolding accidents on the Ambassador Bridge dramatically highlight the dangers facing construction workers. In the construction industry, falls lead all other causes of occupational death.

The photo below was taken on June 21, 2001, when the failure of one of the two suspension points of the scaffold caused a worker to dangle from his safety harness for hours until he was pulled to safety by his fellow workers.

An earlier incident on Nov. 14, 2000, involved 10 members of a painting crew on the Ambassador Bridge whose scaffold collapsed. Three crew members fell into the Detroit River. Two workers were rescued from the river, while one man drowned. The other seven workers were rescued from the bridge, although four were suspended in their harnesses for several hours.

Because the June 21st accident occurred on the U.S. side of the Ambassador Bridge, Michigan's worker safety laws were enforced, even though the incident involved Canadian workers and a Canadian firm. On Aug. 28, 2001, the Canadian employer was cited for seven "serious" worker safety violations with fines totaling $21,000.

MIOSHA identified five violations in relation to the scaffold and its supports, one for the type of hooks on the chains being used to move scaffold to a new suspension point, and one for items related to the company's accident prevention program.

"Thankfully this accident had a happy ending and no one was injured because the worker was wearing a safety harness as required by our stringent safety regulations. However, our Construction Safety investigators found that the firm did not take every precaution it could have to protect this worker's safety while painting the bridge," said CIS Director Kathy Wilbur. "We hope that the severity of the worker safety fines and penalties will help prevent future avoidable accidents and send a clear message to both Canadian and U.S. employers that the safety of workers is a top priority in Michigan."

Construction Fatalities from Falls

Construction is one of the most hazardous industries in Michigan. A recent downward trend in construction fatalities in Michigan was reversed in 2001. There were 28 construction fatalities last year–with 13 of them caused by falls. Tragically, these incidents are neither unusual nor unique.

- On Feb. 27, 2001, a **62-year-old roofer** fell 14 feet to his death in Ann Arbor while installing rubber membrane at a gas station.
- On April 3, 2001, a **24-year-old iron worker** in Marshall was climbing a block wall and fell 12 feet and was impaled by vertical resteel. He died on April 8.
- On May 8, 2001, a **27-year-old laborer** was riding on a moving fork truck and fell 10 feet to his death from an elevated trash box in Battle Creek.
- On Aug 22, 2001, a **55-year-old factory worker** in Elk Rapids fell six feet off a work platform while doing demolition work.
- On Oct. 19, 2001, a **31-year-old painter** on a forklift personnel platform was painting a bridge in Kentwood. He was killed when both he and the platform fell 12 feet to the pavement below.

Information on these fatal work-related falls from elevations are included to emphasize that falls occur in virtually all construction activities–and to stress that not all serious falls occur from great heights. MIOSHA records and monitors construction fatalities to help identify hazards facing construction workers and to focus prevention efforts.

Fall Protection Programs

Preventing injuries and illnesses doesn't increase costs–it increases profits. Companies that establish a safety and health program can expect to reduce injuries 20 to 40 percent. For every dollar invested in prevention efforts–an employer can save four to six dollars in costs of workplace accidents.

MIOSHA Construction Safety Standard Part 45., Fall Protection, sets forth requirements for the employer to provide fall protection systems when there is a fall distance of six feet or more. Any unprotected working surface which is six feet or more above a lower level should be protected from falling by the use of a guardrail system, safety net system, or personal fall arrest system. These hazardous exposures exist in many forms, and can be as seemingly innocuous as painting from a step ladder to something as high-risk as connecting bolts on high steel at 200 feet in the air.

MIOSHA Part 45., Fall Protection, requires employers to design and use comprehensive fall protection programs to reduce serious or fatal injuries. At a minimum, employers must:

- Incorporate safety in work planning,
- Identify all fall hazards at a work site,
- Conduct safety inspections regularly,
- Train employees in recognizing and avoiding unsafe conditions, and
- Provide employees with appropriate protective equipment and train them in its use.

In a new report, the National Institute for Occupational Safety and Health (NIOSH) recommends strategic precautions to prevent fatal, work-related falls. "***Worker Deaths by Falls: A Summary of Surveillance Findings and Investigative Case Reports***," provides a practical on-site resource for assessing individual workplaces, identifying risk factors for falls, and developing effective preventive measures.

The report is available at no charge by calling the NIOSH information number, 800.356.4674. The Consultation Education & Training (CET) Division has construction safety consultants available to help with fall protection and other construction safety concerns. Call 517.322.1809 to contact the CET Division. ■

(Photo by: Kent Phillips, Detroit Free Press.)
After a scaffolding accident on June 21, 2001, a worker hangs in his safety harness from the Ambassador Bridge.

ERGONOMICS | Controlling Work-Related MSDs

By: Sheryl S. Ulin, Ph.D., CPE
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This is the second of a two-part series. Background information and work documentation of MSDs were covered in the Winter 2002 article. In this issue, the authors will cover job assessment and design to reduce MSDs.

Musculoskeletal disorders (MSDs) are a major cause of lost time in many industries. In Michigan, MSDs account for one-third of all workers' compensation costs each year. Once a job analysis is performed to identify the major stresses, interventions can be designed by the employer to prevent ergonomic injuries and illnesses. To be effective, interventions need to be tailored to specific work conditions.

An effective ergonomics program identifies risk factors prior to injury and/or illness–and seeks to control or eliminate those factors. This article will cover suggested interventions for the six most commonly cited occupational risk factors.

Repeated and Sustained Exertions

A repetitive job can be defined as simply a task in which the worker performs the same acts or motions over and over again. Examples include entering data into a computer, assembling products on an assembly line, or loading parts into a press.

The Fernco Inc. Davison plant recently received the CET Ergonomic Innovation Award. Fernco injection machine operator Melissa Wood, works at a slant table that eliminates awkward bending.

Job documentation information can be used to analyze the repetitiveness of a job. For many jobs, the number of exertions per part can be calculated from the work method. The total number of exertions per unit time then can be computed from production information such as standard times or records of parts produced.

The 10-point scale below can be used to determine the repetition of the job.

Very High (10): Rapid steady motion/exertion–it's difficult to keep up.

High (8): Rapid steady motion–wasted motions cause the worker to fall behind.

Medium (6): Steady motion–but the worker can keep up.

Medium Low (4): Slow steady motion.

Low (2): Frequent pauses in each work cycle.

Very Low (0): The worker's hands are idle most of the time.

Reducing Repetitive Exertions

If MSDs exist and cannot be controlled by regulation of other factors, the repetitiveness can be reduced through changes in **work organization**. Although unpopular, **work standards** or **incentive systems** may need to be changed to decrease the incidence and costs associated with MSDs.

Motion economy can be effectively used to decrease the number of exertions each cycle by modifying work layout, changing the arrangement of tools and materials, or designing computer functions. **Worker rotation** among jobs that entail exertions of different muscles or joints can reduce repetition. **Work enlargement** can be used by combining operations that use different motion tasks or patterns into a new job.

The **quality of parts, materials, and maintenance** affects the number of movements. For example, additional motions are needed to trim edges of poorly molded parts. Therefore quality parts and materials and an **aggressive preventive maintenance program** can decrease the number of exertions. Mechanical aids such as power tools can reduce the frequency and time required to complete a job.

Forceful Exertions

The forceful elements of a job can be identified from the work methods analysis performed in the job documentation. Exertions are required to move, lift, lower, slide, or hold objects against gravity or against reaction forces. In many cases, information about the tools and materials can be used to estimate force requirements. For example, holding a 5 kg tool requires more force than a 2 kg tool. Similarly, tightening bolts to 100 Newton-meters requires more force than to 50. In addition moving an object requires more effort than reaching or grasping it.

Worker ratings of the force exerted, tool torque, or tool weight can be used to assess forceful exertions. Researchers used worker ratings to determine the acceptable weights for tools in an automotive trim department. Tools ranged in mass from 0.5 kg to 7 kg. Nearly all of the tools with a mass less than 1.5 kg were rated as "just right," while nearly all tools with a mass greater than 2.25 kg were rated as "too heavy."

Exertion forces sometimes can be **directly measured** by placing the work on a force gauge or attaching force-sensitive materials to the work object or hand. The instrumentation used for measuring force may require expensive equipment and considerable expertise.

Electromyography (EMG) can be used to measure the electrical potentials produced by contracting muscles. Electrodes are positioned over muscles used during work tasks. The force exerted can be estimated by recording the EMG as the subject works.

Reducing Force Requirements

Common sense dictates that if there has been a problem with MSDs, the force requirements should be minimized. The methods below can be used for reducing force requirements.

Friction enhancement entails increasing friction to reduce the force needed to hold objects or decreasing friction to make it easier to slide them through the hands. Surface treatments, such as covering an aluminum handle with textured rubber will enhance its friction. In other cases, friction can be enhanced by using gloves. **Reducing the weight of a load** may be accomplished by picking up fewer objects at a time or by sliding objects rather than lifting them. Picking up fewer objects should be balanced against the need for added movements that may increase repetitiveness.

Mechanical assists such as hoists and articulating arms can be used to support the weight of tools. These devices are particularly useful when it's not possible to change the tool or the number of parts handled. In fact, such devices can make possible the use of larger tools and the handling of more parts, while at the same time decreasing force and repetitiveness. Articu-

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Nursing and Personal Care Facilities
Making Worker Safety a Priority

By: Martha Yoder, Chief
General Industry Safety Division

A strategy of the MIOSHA Strategic Plan is to focuses program resources toward specific industries and types of accidents and illnesses. The plan identifies specific industries , injuries and illnesses for increased program attention through Fiscal Year 2003. The goal is to reduce injury and illness rates in the targeted industries by 15 percent.

Nursing and personal care facilities is one of the industries identified in the strategic plan. This is an important industry in Michigan. The work performed in these facilities is labor intensive and requires significant physical exertion. The 1999 Michigan survey of occupational injuries and illnesses reports the total injury and illness case rate for the industry of 20.6. That means, for every 100 workers in nursing and personal care facilities, nearly 21 are injured or become ill due to work-related exposures, compared to just under eight people for Michigan as a whole.

The work performed in nursing and personal care facilities is labor intensive and requires significant physical exertion.

MIOSHA's strategy for addressing hazards in nursing and personal care facilities has been to focus on outreach efforts during the initial years of the plan, followed by greater enforcement presence in subsequent years.

The General Industry Safety Division began increased enforcement activity in this industry in September 2001. Since that time, 36 inspections have been completed, identifying 205 violations, with initial proposed penalties of $63,750. Below are the most frequently identified MIOSHA violations.

Electrical Safety

Of the top 25 violations cited in nursing and personal care facilities, 10 are related to electrical safety issues. Electrical safety issues identified during inspections include the following:

- Maintain a written copy of electrical lockout procedures which are available to employees.
- Guard live parts of electrical equipment operating at 50 volts or more against accidental contact due to conditions such as missing outlet and switch plate covers.
- Grounds missing on plugs including cord and plug connected refrigerators, freezers, and air conditioners.
- Lack of a cover on unused opening in cabinets, boxes and fittings.
- The inappropriate use of flexible cords and cables as a substitute for the fixed wiring of a structure; where run through holes in walls, ceilings, or floors; run through doorways, windows, or similar openings; attached to building surfaces; or where concealed behind building walls, ceilings, or floors.
- Lack of training for exposed employees in safety-related work practices.
- Reversed polarity.
- Lack of covers for pull boxes, junction boxes and fittings.

Machine Guarding

Point of operation guarding was the number one machine guarding concern identified. Common issues include guarding of food processing equipment such as meat slicers and mixers in kitchens; and saws and bench grinders in maintenance shops.

Unguarded belts and pulleys are the second machine guarding concern. Exposures were identified when guards or panels are removed from washers and dryers, maintenance equipment, and air compressors.

Lockout-Tagout

Equipment and machinery must be locked out when employees are performing servicing or maintenance work in which the unexpected energization or start up of the machines or equipment, or release of stored energy, could cause injury to employees. The provisions of lockout-tagout apply when any of the following situations exist:

- An employee must either remove or bypass machine guards or other safety devices, resulting in exposure to hazards at the point of operation;
- An employee is required to place any part of his or her body in contact with the point of operation or the machine or piece of equipment; or
- An employee is required to place any part of his or her body into a danger zone associated with a machine operating cycle.

Lack of lockout procedures and periodic inspections were the most frequently identified lockout-tagout issues.

Hazard Communication

The most frequently cited provision of the Hazard Communication Standard is the requirement for a written Right to Know program. The second most frequently cited deficiency is a lack of the poster required to inform employees about the program.

Personal Protective Equipment (PPE)

Lack of certification that a PPE assessment has been completed was the most frequently cited provision. The need for personal protective equipment must be assessed by analyzing the hazards of each type of job in the facility. Employers must certify in writing that the assessment has been completed.

Fire Exit

Another commonly identified deficiency was the lack of signs to designate fire exists.

Bloodborne Infectious Diseases (BIDS)

A number of provisions of the BIDS standard have been cited during safety inspections. Most frequently has been the requirement for an exposure control plan.

Ergonomic Issues

In addition to the above, ergonomic hazards must be a foremost concern for those in the nursing and personal care industry. Employers are encouraged to be proactive in their efforts to identify, evaluate, and control risk factors associated with musculoskeletal disorders. ■

CET Services: Help is Available

The Consultation Education and Training (CET) Division spearheaded an extensive outreach program for nursing and personal care facilities in conjunction with MIOSHA's Strategic Plan.

During fiscal year 2001, CET staff provided 290 consultations to assist these facilities in hazard prevention, and conducted 115 seminars and special programs for these facilities. The seminars covered such topics as ergonomics, bloodborne infectious diseases, tuberculosis prevention, personal protective equipment and other related safety issues.

CET services are available to Michigan employers at no cost. For further information, call 517.322.1809.

Hearing Loss: Identification of STS, Now What?

By: Eric D. Zaban, Industrial Hygienist
Occupational Health Division

We have all heard of the three R's for avoiding excessive material waste: reduce, reuse, and recycle. Now, we have the **eight R's of hearing loss prevention**, as identified by Gayle S. Rink, RN, MS, COHN-S, in the fall 2001 edition of the newsletter of the Council for Accreditation in Occupational Hearing Conservation, *CAOHC Update* (1).

Hearing loss is one of the most common occupational illnesses. Some 30 million Americans are exposed to hazardous noise on the job. Studies have shown that quieter workplaces are more productive and efficient, and they have lower injury rates than noisier work settings.

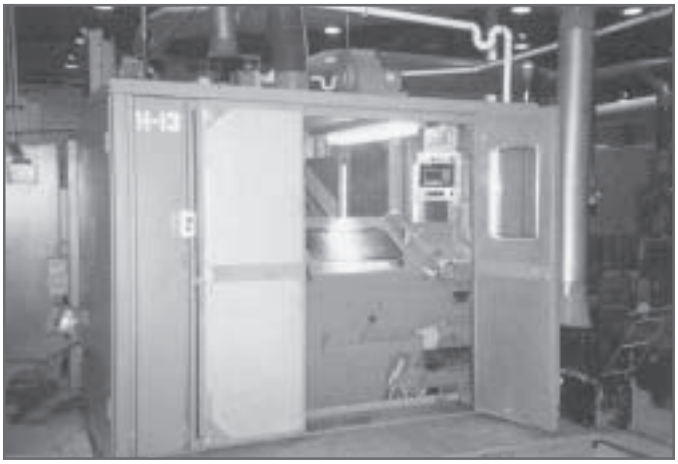
When employee sound exposures exceed 90 dBA TWA_8 (Eight-hour Time Weighted Average), Rule 4 of Part 380 *Occupational Noise Exposure* requires implementing engineering controls to **reduce** sound exposure. This is accomplished via implementation of engineering controls or job **reassignment** (i.e. administrative controls). When these efforts fail to reduce sound exposure levels below 85 dBA TWA_8, the employer must administer a continuing effective hearing conservation program. Of the noise rules, OSHA compliance industrial hygienists nationwide cite violations for failure to implement a hearing conservation program most often.

In addition to sound exposure monitoring, rule posting, training, and hearing protection device use, employers shall administer an audiometric test program. Each employee's annual audiogram is compared to that employee's baseline audiogram to determine if a standard threshold shift (STS) has occurred. The rule defines an STS as a change in the hearing threshold relative to the baseline audiogram of an average of 10 dBA or more at 2000, 3000, and 4000 Hz in either ear.

Employers have the option to **retest** employees within 30 days from the identification of an STS. This may be performed to verify a relative hearing loss or a medical etiology that caused the original test results. This also allows medical professionals advance notice of the need to provide preventive counseling for employees demonstrating temporary shifts. **Refitting** hearing protection devices is required for any employee showing an STS. Where those employees not previously using protection show STS, the use of hearing protection becomes a requirement. When any employee shows an STS, **retraining** that employee on the use and care of hearing protection is required by Rule 16.

When an employee shows an STS and additional testing is needed or if the use of hearing protection may be a contributing factor to medical pathology of the ear, a **referral** for an audiological or otological exam is required. The American Academy of Otolaryngology - Hand and Neck Surgery provides guidelines for medical problems which may require a referral, including persistent tinnitus, rapidly progressive hearing loss, feelings of fullness or discomfort, history of ear pain, a foreign body in the ear canal, or cerumen accumulation sufficient to completely obstruct the view of the tympanic membrane.

When an employee shows an STS, that employee must be notified in writing within 21 days. In Michigan, a 10 dBA shift (i.e. an STS) is to be **recorded** on the new OSHA Form 300 under the "all other illnesses" column. Effective hearing loss prevention programs are **reviewed** annually to identify and correct deficiencies. For example, administrators should scrutinize exposure and audiometric data to identify sound reduction and employee reassignment priorities.



As part of their hearing conservation program, Dexter Fastener Technologies Inc. encloses a cold header machine. Enclosures and other engineering controls can produce significant reductions in sound exposure.

The eight R's of hearing conservation are a way to recall the basic requirements of the noise rules. Beyond regulatory compliance, employers and employees share responsibility for maintaining a culture that promotes self-protective behaviors resulting in optimum hearing health.

Strategic Plan Update - Reduction in Noise-Induced Hearing Loss

One of the goals in the MIOSHA Strategic Plan is to reduce the number of noise-induced hearing losses for employees in the state. The **Occupational Health Division** (OHD) is conducting enforcement inspections where employee noise exposures are considered to be the most prevalent.

On Aug. 14, 2000, *Michigan Occupational Health Directive No. 00-2R* established procedures for conducting local emphasis programming investigations to comply with MIOSHA's Strategic Plan Performance Goal 1.1C. By focusing resources on 26 standard industrial classifications among logging/woodworking, foundry, and fabricated metal industries, a large number of employees exposed to excessive sound levels benefit from enforcement, on-site consultation, and educational outreach programming.

During FY2000 and FY2001, the Occupational Health Division performed 113 compliance investigations resulting in 217 violations of the *Occupational Noise Exposure* rules. During FY 1998, before Strategic Plan 1.1C was implemented, the division cited 78 noise violations. In FY2001, after the plan had been implemented, the division cited 186 noise violation, an increase of 58 percent from FY1998.

Similarly, the **Consultation Education and Training (CET) Division** has provided noise-related services. During FY 2001, CET Consultants performed 60 employer field consultations and 52 education and training programs which included noise hazard topics. Both compliance and consultation activities continue through FY 2003.

The CET Division offers these noise-related services: helping employers with noise exposure monitoring of their employees; assisting them in establishing a hearing conservation program; offering some inexpensive means of noise controls; and training employers and employees in the effects of noise exposure. To learn more about the **CET services**, please call **517.322.1809**.

For a complete copy of the noise standards, contact the **Standards Division** at **517.322.1845**, or visit the MIOSHA website at: **www.cis.state.mi.us/bsr**.

(1) Rink, Gayle S. "STS: Back to the Basics" CAOHC Update 13.3(2001): 3-4. ■

The Bottom Line

Workplace Safety and Health Makes Good Business Sense

Hills & Dales General Hospital - Cass City

Hills & Dales General Hospital was founded in 1960 to support, maintain and develop health services in Cass City and the surrounding communities. Their mission is to serve these communities honestly and responsibly in their total scope of health care needs–ranging from community health education through comprehensive patient care.

Health care is one indicator of the quality of life in any area. The growing diversity of health care systems includes a variety of settings, such as: hospital, long term care, home health, primary care, specialty care, and rehabilitation. The American health care system is experiencing fundamental change–better informed patients demand high quality care, advanced technology, with an emphasis on disease prevention and wellness.

Hills & Dales General Hospital is proud to respond to the health care needs of Cass City and the surrounding communities. Through integrated systems, they can assist patients in managing any health problems in a coordinated fashion. Their 275 employees are committed to providing the highest quality patient care.

Proactive Safety Approach

Healthcare professionals devote their careers to saving lives. Yet in caring for patients, they may place their own health at risk. Hills & Dales General Hospital recognizes the risks facing healthcare workers and is dedicated to providing a work environment that protects the safety and health of their workers.

Hills & Dales General Hospital believes in a proactive approach to safety and does not hesitate to use experts to help achieve their safety and health goals. Over the past three years, they have reduced their lost time incidents by 90 percent. Director of Nursing **Rosanne Prill** emphasized, "Each incident is studied and analyzed for prevention measures that can be taken."

They have implemented several engineering controls to reduce/eliminate needlesticks and back injuries, and provide continual education and training for their staff. A key strategy in preventing back injuries is to give all employees a back in-service evaluation with the Rehabilitation Department upon hire, and annually thereafter. Employees who experience a back injury (at home or work) are required to receive evaluation and education prior to returning to work.

They have completed several ergonomic studies within the facility to ensure that an ergonomically safe work environment is provided for staff. A Return-to-Work Program has been developed and implemented. Employees who cannot return to work in the same position, are placed on a job they can perform while on restrictions.

Hazard surveillances are completed on a quarterly bases by all departments, which heightens awareness within each department for situations that can lead to potential injury. "Education, training, and awareness are key to maintaining a safe work environment," said Safety Director **Sue Kappen**.

Team Effort

Chief Operating Officer **Jean Anthony** states, "Patient and employee safety are at the top of our list. It takes a team effort to develop the safest environment possible. Our team members work very diligently to achieve this goal."

CET Safety Consultant **Dave Luptowski** recommended Hills & Dales for this column. "You learn to recognize sincere concern for health and safety issues as a safety consultant, and their staff wanted training to be able to handle their own problems," said Luptowski. "I have never seen more interest to try and learn about potential hazards so problems could be averted."

In an industry where back cases run four times that of their general industry counterparts, Hills and Dales has achieved a fantastic record. "If one word had to be used to sum up the success of their program, the word would be training." Luptowski said.

This employee is performing correct lifting and body mechanic techniques as part of the Hills & Dales Return-to-Work Program.

This column features successful Michigan companies that have established a comprehensive safety and health program which positively impacts their bottom line. An accident-free work environment is not achieved by good luck—but by good planning! Creating a safe and healthy workplace takes as much attention as any aspect of running a business. Some positive benefits include: less injuries and illnesses, lower workers' compensation costs, increased production, increased employee morale, and lower absenteeism.

Fire Fighting Rule Revisions

MIOSHA Revised Part 74, Fire Fighting, Effective December 5, 2001

By: Deward Beeler, Region 3 Supervisor
Michigan Fire Fighters Training Council
Michigan State Police Fire Marshal Division
Lee Jay Kueppers, Safety Consultant
Consultation Education & Training Division

Firefighters work in environments which place them at a greater risk for on-the-job injury or death. According to Michigan State Police statistics, the Michigan fire service responds to more than 50,000 fires annually including dwellings, commercial buildings, mobile properties, and other types of fires. In addition, fire departments voluntarily responded to more than 300,000 non-fire incidents such as gas leaks and spills, downed power lines, mutual aid, and other public services. During 1998, there were 630 reported injuries to fire personnel in the line of duty.

Shelby Township firefighters, in full protective ensemble, are responding to a structure fire.

Michigan has a long and proud history of recognizing the dangers faced by firefighters. MIOSHA revised Part 74, Fire Fighting, effective December 5, 2001. It was revised to keep pace with the latest national consensus practices and technological advances in equipment. Since 1977, this standard has been unique in its scope: All publicly employed municipal firefighters are covered, be they full-time, part-time or volunteer. Federal OSHA has no such rule.

This article provides a summary of the significant changes to Part 74. A complete copy of the standard is available at: www.cis.state.mi.us/bsr/divisions/std. In January, the Standards Division mailed a copy to 1,500 Michigan fire stations.

Air Quality

Rule 7415, Fire Station Safety, revisions require all sleeping quarters to be equipped with a carbon monoxide detection device, as well as the previously required smoke detector. It also requires that all new construction or significantly remodeled facilities (50 percent or more area) that house fire apparatus shall install a controlled process exhaust ventilation system that will effectively control exhaust emissions, and will assure that employee exposures do not exceed applicable MIOSHA exposure limits. This rule is effective 18 months after December 5, 2001.

Personal Protective Equipment

Under Rule 7433, hoods are now **mandated** for all Michigan firefighters who are engaged in, or are exposed to, fire hazards of emergency operations. The hoods must meet the provisions of National Fire Protection Association (NFPA) 1971: Standard on "Protective Ensemble for Structural Fire Fighting," 2000 Edition. Previous to this edition, hoods were not required, although they were commonly supplied by many fire departments.

Under Rule 7432, an employer must provide protective coats and trousers, or a protective coverall to all employees who engage in, or are exposed to, fire hazards of emergency operations. Rule 7433 requires fire departments to provide primary head, face and eye protection appropriate for a specific hazard to all employees exposed, or potentially exposed. The protection equipment must meet the requirements of NFPA 1971.

Fire departments must assess potential emergency operation scenes to determine what hazards are present, or likely to be present, and match the protective device to the hazard. An employer shall have and implement written operational procedures specific to the type of hazard.

Head, face, and eye protection must be maintained in a state of readiness for immediate response to structure fires or other emergencies. Municipal employees engaged in structural fire fighting must be issued, and must use, helmet face shields or the breathing apparatus facepiece with helmets. This does not mean a fire department must purchase new helmets, helmets compliant with previous editions of the standard and in good condition are acceptable.

Rule 7431 revisions provide that fire departments must implement procedures for inspecting and servicing personal protective equipment, particularly following fires or emergency usage. The procedures employed for servicing, such as product washing or other cleaning, must comply with the manufacturer's recommendations. In addition, Rule 7431 requires that there be a procedure to determine whether a piece of protective equipment should be repaired or replaced, with needed repairs made in compliance with the manufacturer's recommendations.

Personal Alert Safety System (PASS)

Rule 7440 requires fire departments to provide and enforce the use of a PASS system whenever a firefighter is using a self-contained breathing apparatus while engaged in structural fire fighting operations. These alert systems can save lives and prevent injury to firefighters by summoning help when they are in trouble. According to many sources, PASS systems are already used across the state. Now they are **mandated** by Michigan's worker protection rules.

Equipment

Rule 7423, Fire Apparatus with Elevating Platforms, and 7424, Aerial Apparatus, revisions further clarify safety guidelines in the safe operation of these pieces of equipment.

Rule 7442 now requires that chain saws shall be used that are specifically designed for fire fighting operations to cut holes in roofs, floors, and walls. Rule 7463 now requires that all life safety rope systems comply with the most current NFPA standard, being NFPA 1983, the 1995 edition. Specific inspection provisions are mandated for synthetic ropes.

Written Emergency Operation Procedures

Rule 7451 better clarifies what must be in written procedures for emergency operations, which must include provisions for an incident commander and a nationally recognized incident management system.

Please keep in mind, the above article summarizes the revisions to Part 74, but does not discuss the entire document. It is each municipal fire department's responsibility to be in compliance with the entire rule, as well as other MIOSHA rules such as Firefighter Right-To-Know.

Help Available

Consultation Education and Training Division consultants are available to provide training related to Part 74, and can be contacted at **517.322.1809**. Questions regarding interpretation of the rules should be addressed to the **General Industry Safety Division** at **517.322.1831**. ■

MIOSHA Staff Help Protect Workers at the World Trade Center

On Jan. 27th, nine MIOSHA safety and health professionals reported for work in New York City as part of the around-the-clock effort to ensure the safety and health of workers involved in the World Trade Center recovery effort.

"The World Trade Center is one of the most dangerous worksites in America," said CIS Director **Kathy Wilbur**. "We are proud to send our MIOSHA professionals to help ensure the safety and health of the heroic men and women who are tirelessly working in the recovery operation at Ground Zero."

Since the September 11 terrorist attack, OSHA has worked at the World Trade Center site 24 hours a day, seven days a week to help protect workers involved in recovery, demolition and site clearing operations. More than 1,000 federal and state OSHA staffers from throughout the United States have assisted in the protection efforts. As of November, OSHA has recorded nearly 5,000 injuries and 40 near misses during recovery efforts.

To date, a total of 29 MIOSHA staff have worked at the recovery efforts. MIOSHA volunteers represented four divisions: Occupational Health, Consultation Education & Training, General Industry Safety, and Construction Safety. The volunteers were paired with OSHA representatives.

From the Pit: January 28 - February 1, 2002

This is a report from the first group of nine volunteers.

The site at that time appeared to be a large pit (70 feet deep in some areas) surrounded by the slurry wall. We heard several individuals refer to it as a "giant bath tub." The cleanup was reported to be somewhere in the range of 70 to 80 percent complete. There were no fires, however it was reported that "hot spots" were still being uncovered by the grapplers, indicated by clouds of water vapor. There were some reports of human remains being discovered.

The first MIOSHA crew at the World Trade Center: (Standing) Keith Langworthy, John Hodgson, Gerald Noronha, Tony Casaletta, Bob Pawlowski, (Kneeling) Dave Fogle, Sharman Cross, and Barry Simmonds.

The perimeter of the site continues to shrink, which creates some interesting problems where the general public mixes with work efforts. Workers uncovered an ammunition (ammo) vault containing one million rounds of ammo and weapons. A few bullets went off when struck by heavy construction equipment. Fit-testers saw an influx of customs officers who needed respiratory protection so they could go into the pit and take custody of any ammo or weapons that were found.

Seven MIOSHA staff were assigned to perform respirator fit testing and Personal Protective Equipment (PPE) assessment at the OSHA operations trailer; one worked with the industrial hygiene crews performing air sampling; and one worked with crews performing safety walks. The volunteers for the most part worked 2nd and 3rd shifts.

The number of individuals needing fit testing on the 2nd and 3rd shifts was limited, however there was not a lack of workers coming into the trailer in need of replacement cartridges and other PPE. This gave staff an opportunity to do some informal training regarding cleaning, care, fit-checking and use of respirators, and to encourage workers to use their respirators. There was an opportunity to answer many questions as to what types of air contaminants workers may be exposed to and the potential effects of such exposure.

The experience at ground zero was incredible to say the least. Some of the most memorable experiences were meeting real life heroes of that tragic day: NYC firemen and police officers. Their firsthand accounts of the event were astonishing.

Hearing how they selflessly risked their lives to do their jobs and save not only civilians, but their own, invoked a range of emotions too difficult to describe. Seeing reports on television over 600 miles away does not compare to being there in person. Everyone who went to the site left a little something there, but brought back a lot more.

As a group, the MIOSHA volunteers are incredibly thankful for the opportunity to provide services to those working there. ■

Tony Allam at the OSHA Operations Trailer at the World Trade Center.

MIOSHA WTC Volunteers

Paul Aiken	Keith Langworthy*
Tony Allam*	Linda Long
John Brennan	William Lykes
John Byrne	Matthew Macomber
Tony Casaletta*	Patricia Meyer
Elaine Clapp	Sundari Murthy
Sharman Cross*	Gerald Noronha*
Dave Fogle*	Bob Pawlowski*
Don Gibson	James Pike
Richard Grafmiller	Cindy Politowicz
Ruth Hindman	Barry Simmonds*
John Hodgson*	Patrick Sullivan
Chad Ignatowski	Jenelle Thelen
Lee Jay Kueppers	James Zoccoli
DW Johnson	

*January 28 - February 1

MSHARP: MIOSHA's Newest Voluntary Program

By: Chris Passamani, C.I.H., Health Consultant
Consultation Education & Training Division

MIOSHA is launching a new voluntary program, **MSHARP**, **Michigan Safety and Health Achievement Recognition Program**. This program is designed to provide incentives and support to smaller, high-hazard employers to develop, implement and continuously improve effective safety and health programs at their worksites.

MSHARP is a cooperative program between business and government that recognizes Michigan employers and employees committed to creating a workplace culture that makes safety their top priority. MSHARP provides an incentive to employers to emphasize accident and illness prevention–by anticipating problems, not reacting to them.

Workplace safety and health is a long-term endeavor. It requires daily diligence and ongoing commitment. The backbone of MSHARP is the establishment of a safety and health management system. Researchers have found that companies can reduce injuries 20 to 40 percent with an effective safety and health program–saving 4 to 6 dollars for every dollar invested.

Education and training is one of the foundations of the MIOSHA program. One of the more popular ideas in recent regulatory history has been the ability for employers to invite a MIOSHA consultant into their worksite to address specific safety and/or health concerns without the threat of citations or fines.

The Onsite Consultation Program within the Consultation Education & Training (CET) Division will operate MSHARP. Onsite consultants will help employers identify the strengths and weaknesses of their occupational safety and health management system. Employers electing to pursue MSHARP must be committed to developing a safety and health management system that involves employees in significant ways.

Many people are familiar with another MIOSHA recognition program called the Michigan Voluntary Protection Programs (MVPP). Only the "best of the best" can qualify for the MVPP Star award. The newly developed MSHARP guidelines are similar to MVPP, but the goals are more achievable for companies with moderately effective safety and health programs. This new program can be used as a bridge for companies to transform their effective safety and health programs into **exemplary** programs and may be viewed as a stepping-stone for entry into the MVPP.

Eligibility

- Designed to assist the small employer, eligibility is limited to employers having less than 250 employees at the worksite.
- Applicant companies must be on the MIOSHA list of high-hazard industries, or be a part of Michigan's Strategic Plan focus. This gives greatest attention to industries with a previous history of elevated lost-time injuries. These characteristics allow the MIOSHA program to target resources where they are most needed.
- The company must have injury and illness rates below the Michigan average in their Standard Industrial Classification (SIC) code over the last year.
- The company must be a single, fixed worksite.

Recognition Requirements

Once eligibility criteria have been met, the company must agree to the following:

- Allow a comprehensive safety and health survey of the worksite.
- Work with MIOSHA onsite consultants to correct any hazards identified in the survey.
- Develop and implement a comprehensive safety and health management system.
- Involve employees in the development, implementation and operation of their safety and health program.
- Maintain their injury and illness rates below the Michigan average in their industry.
- Achieve a score of two out of a possible three on the required MIOSHA Safety and Health Program Assessment Tool, Form 33.
- Inform MIOSHA prior to making significant work process changes that might introduce new hazards into the workplace.
- Conduct annual self-evaluations and submit the MIOSHA 300 log for review.

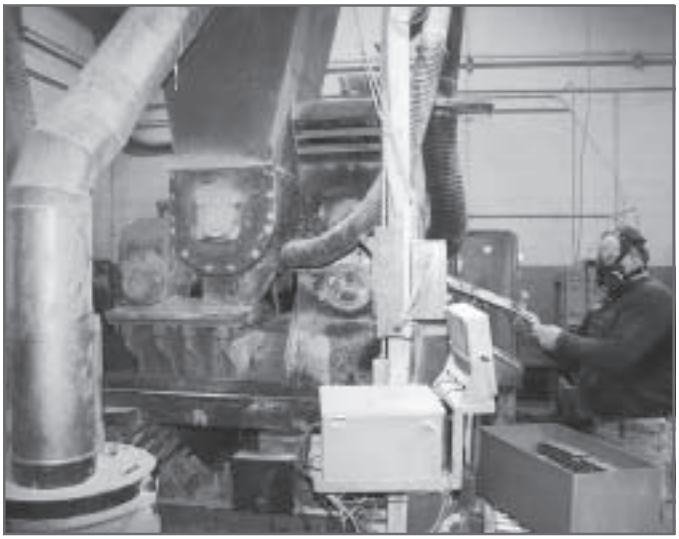
MSHARP is a process designed to identify the strengths and weaknesses of an employer's occupational safety and health management system. The process starts with a request from the employer and completion of the application process. The application initiates a comprehensive consultation including an initial assessment, followed by a report with recommendations.

The process includes one or more action plan meetings between the employer and the onsite consultant to identify and begin implementation of objectives designed to meet the goal of achieving MSHARP certification. MIOSHA onsite consultants will continue to coach applicant companies as long as there is commitment to correcting hazards and improving the safety and health program.

When all requirements have been satisfied the company will be issued an **MSHARP Certificate of Achievement**, as well as a 12-month exemption from MIOSHA "programmed inspections." Other types of inspections, such as those based on formal employee complaints, imminent danger, referrals, fatality investigations, etc. are not preempted by participation in MSHARP.

MSHARP recognition is granted in 12-month increments and is limited to three years. To continue in the program, employers must apply for renewal to the CET Onsite Consultation Program. Because the employer should be making progress toward self sufficiency, it is expected that the employer will take more of the responsibility for activities associated with their continued improvement and MIOSHA's involvement will be limited.

If your company is interested, please contact the **CET Onsite Consultation Program** at **517.322.1809** to discuss details and to schedule an onsite safety and health survey. ■



Companies representing high-hazard industries are encouraged to apply for the MSHARP Certificate.

MVPP Program Changes

By: Connie O'Neill, Supervisor
Consultation Education & Training Division

The **Michigan Voluntary Protection Programs (MVPP)** is a recognition program designed to evaluate and recognize companies that have exemplary safety and health management systems. In addition to their outstanding safety and health management systems, their injury and illness data must be lower than the Michigan industry average for their standard industrial classification (SIC) code for the last three years.

The highest level of achievement is the **Michigan Star** award. To date in Michigan only five companies have met this stringent criteria: International Paper, Kalamazoo Container Plant; Tenneco Automotive, Grass Lake Engineering Center; TRW Chassis Systems, Fenton Plant; International Paper, Quinnesec Mill; and West Michigan Air Care, Kalamazoo. These companies have partnered with MIOSHA to pursue continuous improvement with their safety and health performance while maintaining their incidence rates below the industry average. These sites also mentor other establishments in their pursuit of MVPP participation.

The MVPP has recently initiated four significant changes to the program. First, the previously known Merit program has been renamed the **Rising Star** program. Applicants can now apply directly for either the Michigan Star or the Rising Star program.

Second, the criteria for the Rising Star program consist of having injury and illness incidence data at or below the industry average for two out of the last three years. In addition to the data requirements, Rising Star candidates must have a very good safety and health management system in place at their facility.

Third, exemption from program inspections will now be granted for Rising Star sites, as well as Michigan Star sites. However, MIOSHA will continue to investigate safety and health complaints, all fatalities and catastrophes, and significant accidents and chemical spills or leaks.

Fourth, a major change to encourage the small employer to strive for participation in the MVPP is the "small employer adjustment." This adjustment is designed for smaller worksites with limited numbers of employees and/or employee hours worked.

For both Michigan Star and Rising Star programs the safety and health management system must be in place for at least one year and contain the following basic elements:

- **Management Commitment** to safety and health as evidenced by resource allocation, accountability and visibility.
- **Employee Involvement** through joint problem solving, participation on committees, and input into policies and procedures.
- **Worksite Analysis** to ensure potential safety and health hazards are identified and tracked.
- **Hazard Prevention and Control** through engineering controls, administrative controls, safe work practices and personal protective equipment.
- **Safety and Health Training** to ensure that all employees understand the potential hazards to which they may be exposed and how to prevent harm to themselves and others.

Prospective applicants can obtain the **MVPP Informational Kit** that includes: Application Guidelines, SIC code averages for Michigan and the Bureau of Labor Statistics, MVPP Brochure, Requirements Checklist, Summary of "Assurances" employers must agree to if they become an MVPP site, List of current MVPP sites for mentoring.

Kits are available for order through the **Consultation Education & Training (CET)** office at **517.322.1809**. ■

Wage & Hour News

Wage & Hour Division Moves to the new Bureau of Workers' and Unemployment Compensation

On February 7, 2002, Governor John Engler signed Executive Order 2002-1 creating the **Bureau of Workers' and Unemployment Compensation** within the Department of Consumer and Industry Services (CIS).

The executive order combines the **Unemployment Agency** and the **Bureau of Workers Compensation** (also known as the Bureau of Worker's Disability Compensation) in the new agency. Also moved into this agency is the **Wage and Hour Division**. The executive order combines functions with a similar purpose into a single agency. Worker's compensation and unemployment assistance benefits exist to replace wages lost by workers. The Wage and Hour Division collects wages and fringe benefits owed to workers.

"Merging these functions into a single agency will help facilitate data sharing, and Michigan workers will benefit by having a single place to go for answers to compensation questions," said Governor Engler.

The mission of the Wage and Hour Division is to provide public service through the fair, effective, and efficient administration of laws which protect the wages and fringe benefits of Michigan's workers and provide for the safe and legal employment of minors.

Bill Strong will continue as Director of the Wage & Hour Division. "The Wage & Hour Division has worked diligently over the past couple of years to improve services to our customers. We have eliminated our case backlog and streamlined services to get Michigan workers the wages and fringe benefits that are owed to them faster," said Strong. "Our division is excited about these changes and views them as an opportunity to continue to search for even more ways to improve overall customer service."

The administration and enforcement of wage protection laws in Michigan (the Minimum Wage Act, the Payment of Wages and Fringe Benefits Act, the Youth Employment Standards Act and the Prevailing Wages on State Projects Act) is the role of the Wage and Hour Division. The division investigates complaints alleging non-payment of wages and fringe benefits, state minimum wage, overtime, equal pay, and prevailing wage disputes; and monitors youth employment standards including hours of work, and safe, non-hazardous working conditions. The Wage and Hour Division also educates employers and employees in the areas covered by these labor standards.

All phone numbers for the Wage & Hour Division will remain the same, including the general information number 517.322.1825.

Wage & Hour Division
517.322.1825
www.cis.state.mi.us/bsr/divisions/wh/home.htm

CET Awards

MIOSHA recognizes the safety and health achievements of Michigan employers and employees through CET Awards, which are based on excellent safety and health performance.

Eric Neer, Director of Operations, and Ron Roman, Human Resources Manager, Brass Craft Manufacturing Co., with CET Safety Consultant Suellen Cook.

Brass Craft Manufacturing - Brownstown Plant

Brass Craft Manufacturing Company's Brownstown Plant received the **CET Silver Award** for an outstanding safety and health record on Jan. 30. The CET Silver Award recognizes one year without a lost time accident.

CET Safety Consultant **Suellen Cook** presented the award to **Eric Neer**, Director of Operations, and **Ron Roman**, Human Resources Manager. In 1997 they had 22 recordable incidents–in 2001 they did not have one.

"It certainly is great to be recognized by MIOSHA for our safety achievements. The fact that we have no one getting injured at work is even more rewarding. We will continue to make the safety of our employees our number one goal." said Neer.

On Jan. 31st, the plant celebrated 480 days without a recordable accident with a luncheon for all employees. The company considers the cost of the luncheon, $5.00 per person, a very small price to pay for employee safety.

Brass Craft Manufacturing Company is a wholly owned subsidiary of Masco. They offer more than 7,000 products for the professional and do-it-yourself plumber. The Brownstown plant has 175 workers on three shifts.

Interamerican Zinc, Inc. - Coldwater Plant

On Feb. 25th, the Interamerican Zinc, Inc. (IZI) Coldwater Plant received the **CET Gold Award** for an outstanding safety and health record. The CET Gold Award recognizes two years without a lost time accident.

CET Safety Consultant **Quenten Yoder** presented the award to **Larry L. Parkinson**, Vice President & General Manager, and **IZI employees**.

"The IZI employees and facility are very proud to receive this award, as it represents each employee's dedication to maintaining an accident free work facility," said Parkinson.

With 13 workers, IZI recycles galvanizing dross, a by-product of continuous steel galvanizing plants, to recover and purify the zinc contained in dross. The purified zinc metal is returned to the galvanizing plants to be reused to galvanize steel for the automotive, appliance, and construction industries.

Interamerican Zinc is a wholly owned subsidiary of IMCO Recycling, Inc., the world's largest recycler of both aluminum and zinc. IMCO Recycling is dedicated to preserving the environment and protecting the health and safety of their workers.

Gary Sayle, Randy Rubley, Larry L. Parkinson, Joe Hudson, Jesse Hamlin, John Rubley, Quenten Yoder (CET Safety Consultant), Doug Davis, and Jeff Reynolds. (Not pictured: Chris VanEtten, Jose Guerra, Jose Camacho, Brian Reynolds, and Sean Reynolds.)

Fernco Davison Safety Committee members Karen Gaboury Tuni Wilson, Roger Redmond (Safety Director), and Bill Gifford; with CIS Deputy Director Kalmin Smith and CET Consultant Lee Jay Kueppers. (Not pictured: Sally Pence and Debby Turnbull.)

Fernco Inc. - Davison Plant

On March 11th, the Fernco Inc. Davison Plant received the **CET Ergonomic Innovation Award**, which is issued to employers for innovative ideas that have been implemented to reduce worker strain.

CIS Deputy Director **Kalmin Smith** presented the award to the **Fernco Davison Safety Committee: Roger Redmond** (Safety Director), **Tuni Wilson**, **Bill Gifford**, and **Karen Gaboury**.

"All of the projects and changes that the Safety Committee has developed would not have been possible without the Cooper family's commitment to provide the safest work environment for their employees," said Redmond.

The Davison plant has redesigned their manufacturing area and implemented more than 10 major ergonomic improvements. They employ 150 workers on three shifts and produce PVC couplings for plumbing connections.

Darrell Cooper formed Fernco Inc. in 1979. Today Fernco Inc. has facilities in the U.S., Canada, and Europe and is the largest manufacturer and distributor of flexible PVC couplings for waste, sewer and vent applications. Their *PlumbQwik* product line supplies the growing retail "do-it-yourself" home center/hardware market.

Education & Training Calendar

Date	Course Location	MIOSHA Trainer Contact	Phone
May			
13	Safety Solutions for Nursing Homes & Long-Term Care Facilities Harrison	Bob Carrier Karen Jesse	989.386.6629
14	What Did You Say? Checking Your Hearing Conservation Program Lansing	Janet Fekete Safety Council	517.394.4614
14, 15, 16	Safety & Health Administrator Course Cadillac	Jerry Medler Cindy Swiler	231.775.2458
16	Half-Day MIOSHA Recordkeeping Log 300 Workshop Saginaw	Dave Luptowski Bill Lechel	989.755.5751
16	What Did You Say? Checking Your Hearing Conservation Program Grand Rapids	Janet Fekete Safety Council	866.423.7233
21	Bloodborne Infectious Diseases Midland	Jenelle Thelen G.L. Safety Center	800.675.7599
21, 22, 23	Safety & Health Administrator Course Saginaw	Dave Luptowski Bill Lechel	989.755.5751
22	What Did You Say? Checking Your Hearing Conservation Program Southfield	Janet Fekete Ed Ratzenberger	248.557.1281
22	Safety & Health for Nursing Homes & Health Care Facilities Houghton	Dan Maki Philip Musser	906.482.6817
23	Industrial Accident Prevention & Machine Guarding Menominee	Dan Maki Tiffany Sislo	906.863.2679
June			
3	When MIOSHA Visits Allendale	Rob Stacy Brian Cole	800.690.0314
3, 4, 5	Safety & Health Admn. Course for Educ. Institutions & Municipalities Waterford	Richard Zdeb Kathryn Wallace	248.618.7456
4	MIOSHA Update for the Food Processing Industry Westland	Linda Long Toni Herron	734.427.5200
4	Michigan Voluntary Protection Programs Workshop Auburn Hills	Dave Luptowski Cindy Mickey	248.232.4580
5	Industrial Ergonomics Gaylord	Doug Kimmel Shelly Hyatt	231.546.7264
11	Supervisor's Role In Safety & Health in the Construction Industry Midland	Dave Luptowski G. L. Safety Center	800.675.7599
12, 19, 26	Safety & Health Administrator Course for Educational Services Southfield	Jennifer Clark-Denson Ed Ratzenberger	248.557.7010
17	When MIOSHA Visits Livonia	Suellen Cook Schoolcraft College	734.462.4448
19	Powered Industrial Truck Train-the-Trainer Bernard Sznaider	Port Huron Terri Johns	810.985.1869
26	Industrial Ergonomics Cadillac	Jerry Medler Cindy Swiler	231.775.2458
26	Tree Trimming & Power Lines Grand Rapids	Rob Stacy W.M.S.C.	800.704.7676

Co-sponsors of CET seminars may charge a nominal fee to cover the costs of equipment rental, room rental, and lunch/refreshment charges. For the latest seminar information check our website, which is updated the first of every month: www.cis.state.mi.us/bsr/divisions/cet/cet_cal.htm.

Construction Safety Standards Commission

Labor

Mr. Carl Davis**
Mr. Daniel Corbat
Mr. Andrew Lang
Mr. Martin Ross

Management

Mr. Peter Strazdas*
Mr. Charles Gatecliff
Mr. Thomas Hansen
Ms. Cheryl Hughes

Public Member

Mr. Kris Mattila

General Industry Safety Standards Commission

Labor

Mr. Michael D. Koehs*
Mr. James Baker
Mr. Tycho Fredericks
Mr. John Pettinga

Management

Mr. Timothy J. Koury**
Mr. Michael L. Eckert
Mr. Thomas Pytlik
Mr. George A. Reamer

Public Member

Ms. Geri Johnson

Occupational Health Standards Commission

Labor

Dr. G. Robert DeYoung
Ms. Cynthia Holland
Capt. Michael McCabe
Ms. Margaret Vissman

Management

Mr. Robert DeBruyn*
Mr. Michael Lucas
Mr. Richard Olson
Mr. Douglas Williams

Public Member

Dr. Darryl Lesoski**

***Chair** ***Vice Chair**

Standards Update

Protecting Firefighters in Michigan

For 25 years, Michigan has been a leader in firefighter protection through the unique General Industry Standard **Part 74 - Fire Fighting**. Unlike federal OSHA, we cover public employees and Part 74 in particular covers municipal firefighters. This standard applies to full-time and part-time volunteer firefighters who serve our cities, townships and small rural villages across our state. As of this year, there are more than 31,000 firefighting public servants working at nearly 1500 fire stations.

All of these firefighters will benefit form the service of 12 of their colleagues who worked diligently on the Part 74 Advisory Committee to improve and revise Part 74, to make sure this standard reflects current national firefighting guidelines. These revisions are effective December 15, 2001. See Page 8 for an article by two advisory committee members on the amendment details.

With firefighter safety as their ultimate goal, the Part 74 Advisory Committee began with the vision to craft a balanced set of revisions which would enable the standard to continue to protect Michigan's firefighters. The advisory committee started in 1999, and met monthly, logging in more than 60 hours of meeting time. Some individuals traveled over 900 miles (Round trip) to faithfully attend each meeting. The committee solicited and received input on the revisions. They also digested volumes of material on National Fire Protection Association (NFPA) requirements. They conscientiously attended meeting, debated options and reached a consensus on the issues.

After being unanimously approved by the advisory committee, the draft was sent to the General Industry Standards Commission, and a regulatory and economic impact statement was prepared. Public Hearings were conducted in St. Ignace and Lansing, giving all concerned the opportunity to speak to the amendments or submit written testimony. Upon final approval by the commission, the document proceeded through the promulgation process and received formal certification from the Office of Regulatory Reform.

The Standards Division, the complete MIOSHA program, and Michigan citizens at large should thank these firefighting professionals for their participation in this process and their commitment to protecting the workers who put themselves at risk to fight fires and respond to emergency incidents.

The mission of every MIOSHA advisory committees is to write rules that are clear, and speak to the provision of a safe and healthy work environment. The most common request of standard users are that referenced materials be updated or included, for ready availability to the user.

MIOSHA Part 74 Advisory Committee

Representing Labor:

James Davison
Michigan State Utility Workers Council
AFL-CIO
Paul Hufnagel
Michigan Professional Fire Fighters Union
James Rose
International Paper Company &
Michigan State Firemen's Association
Frank Trigger
Michigan Professional Fire Fighters Union

Representing Management:

Dennis Andrew
City of Rochester Hills
Deward Beeler, MFFTC
Michigan State Police Fire Marshal Division
Richard Powell
Saginaw Township &
Southeast Michigan Fire Chiefs Association
George Simmons, Jr.
Department of Labor and Industrial Relations
Michigan State University

Technical Advisor:

Richard Mahaney
Fire Control Services
Jackson, MI

Public Advisor:

Fredrick Muller (deceased)
Grand Traverse Fire Department &
Michigan Association of Fire Chiefs

MIOSHA Staff

Eva Hatt, Assistant Chief
General Industry Safety Division
Connie Munschy, Chief
Standards Division
Ruth Hindman, Supervisor
General Industry Safety Division
Marsha Parrott-Boyle, Standards Specialist
Standards Division
Lee Jay Kueppers, Safety Consultant
Consultation Education & Training Division
Bill DeLiefde, Supervisor
Occupational Health Division

To contact Connie Munschy, Chief of the Standards Division, or any of the Commissioners, please call the Standards Division Office at 517.322.1845.

Status of Michigan Standards Promulgation

(As of March 18, 2002)

Occupational Safety Standards

General Industry

Part 08.	Portable Fire Extinguishers	Approved by Commission for review
Part 18.	Overhead and Gantry Cranes	Formal certification by ORR
Part 19.	Crawler, Locomotives, Truck Cranes	At Advisory Committee
Part 20.	Underhung and Monorail Cranes	Approved by Commission for review
Part 58.	Vehicle Mounted Elevating & Rotating Platforms	Approved by Commission for review
Part 74.	Fire Fighting/Amendment #2	Final, effective 12/5/01

Construction

Part 01.	General Rules	RFR approved by ORR
Part 07.	Welding & Cutting	Approved by Commission for review
Part 08.	Handling & Storage of Materials	Approved by Commission for review
Part 14.	Tunnels, Shafts, Cofferdams & Caissons	Draft to Commission for review
Part 18.	Fire Protection & Prevention	Formal rules submitted
Part 25.	Concrete Construction	Approved by Commission for review
Part 26.	Steel and Precast Erection	Informal approval by LSB
Part 30.	Telecommunications	Approved by Commission for review
Ad Hoc	Communication Tower Erection	Approved by Commission for review

Occupational Health Standards

General Industry

Benzene	Corrected error, effective 1/23/02
Bloodborne Infectious Diseases	Final, effective 10/18/01
Carcinogens R 2301-2302	RFR approved by ORR
Forging Machines R 3210	Rescinded due to duplication
Grinding, Polishing & Buffing	RFR submitted
Non-ionizing Radiation R 2420	RFR approved by ORR
Powered Industrial Trucks R 3225 (OH Rules only)	Rescinded due to duplication
Respirators in Dangerous Atmoshperes (OH Rules only)	Rescinded due to replacement
Sanding Machines R 3230 (OH Rule only)	Rescinded due to duplication
Ventilation for Certain Hazardous Locations R 3110	Rescinded due to duplication

Construction

Air Contaminates R 6201 (Gases, Vapors, etc.)	Final, effective 1/23/02
Sanitation for Construction R 6615	Approved by Commission for review
Illumination for Construction R 6605	Approved by Commission for review
Medical Services & First Aid for Construction R 6610	Rescinded due to duplication

Administrative Rules

Part 11. Recording and Reporting of Occupational Injuries and Illnesses	Final, effective 1/2/02

The MIOSHA Standards Division assists in the promulgation of Michigan occupational safety and health standards. To receive a copy of the MIOSHA Standards Index (updated May 2000) or for single copies and sets of safety and health standards, please contact the Standards Division at 517.322.1845.

RFR	Request for Rulemaking
ORR	Office of Regulatory Reform
LSB	Legislative Services Bureau
JCAR	Joint Committee on Administrative Rules

Variances

Published April 19, 2002

Following are requests for variances and variances granted from occupational safety standards in accordance with rules of the Department of Consumer & Industry Services, Part 12, Variances (R408.22201 to 408.22251).

Variances Requested Construction

Part and rule number from which variance is requested
Part 8 - Material Handling - Rule R408.40833, Rule 833(1)
Summary of employer's request for variance
To allow employer to tandem lift structural steel members under controlled conditions and with stipulations.
Name and address of employer
American Erectors, Inc.
Location for which variance is requested
Telegraph Storage Facility, Southfield
Galyan's Sporting Goods, Okemos
Name and address of employer
Assemblers, Inc.
Location for which variance is requested
U of M Commons Building, Ann Arbor
Name and address of employer
Douglas Steel Erection Company
Location for which variance is requested
Kellogg Company, Battle Creek
William Beaumont Hospital, Royal Oak
Name and address of employer
McGuire Steel Erection, Inc.
Location for which variance is requested
Heilmann Middle School, Detroit
New Saline High School, Saline
Name and address of employer
Pioneer Inc.
Location for which variance is requested
Spectrum Health, Grand Rapids
Name and address of employer
Redinger Steel Erectors, Inc.
Location for which variance is requested
Rochester College Library, Rochester Hills
Name and address of employer
Sova Steel, Inc.
Location for which variance is requested
American Axle, Detroit
Name and address of employer
Strand Constructors, Inc.
Location for which variance is requested
Saginaw Valley State U, University Center
Name and address of employer
Whaley Steel Corp.
Location for which variance is requested
Michigan Ethanol LLC, Caro

Part and rule number from which variance is requested
Part 14 - Tunnels, Shafts, Caissons and Cofferdams - R408.41482, Rule 1482(9)
Summary of employer's request for variance
To allow employees to remain in the caisson under controlled conditions when material is being hoisted from the caisson and according to certain stipulations.
Name and address of employer
Toledo Caisson Corporation
Location for which variance is requested
Detroit Edison Monroe Power Plans, Monroe

Part and rule number from which variance is requested
Part 32 - Aerial Lift Platforms - Rule R408.43209, Rule 3209 (6)
Summary of employer's request for variance
To allow employer to distribute the load outside the work platform of an aerial lift by use of a manufactured pick using certain stipulations.
Name and address of employer
CRW Masonry, Inc.
Location for which variance is requested
Central Avenue Office Development, Holland

Part and rule number from which variance is requested
Part 32 - Aerial Lift Platforms - Rule R408.43209, Rule 3209 (8)(b) and R408.43209, Rule 3209 (9)
Summary of employer's request for variance
To allow employer to firmly secure a scaffold plank to the top of the intermediate rail of the guardrail system of an aerial lift for limited use as a work platform provided certain stipulations are adhered to.
Name and address of employer
John E. Green Company
Location for which variance is requested
General Motors Delta Facility, Delta Twp.
Name and address of employer
Lake State Insulation
Location for which variance is requested
General Motors Delta Facility, Delta Twp.
Name and address of employer
Wolverine Fire Protection Co.
Location for which variance is requested
GM Tech Center - VEC, Warren

Variances Granted Construction

Part and rule number from which variance is requested
Part 8 - Material Handling - Rule R408.40833, Rule 833(1)
Summary of employer's request for variance
To allow employer to tandem lift structural steel members under controlled conditions and with stipulations.
Name and address of employer
American Erectors, Inc.
Location for which variance is requested
New Hartland High School
Name and address of employer
Assemblers, Inc.
Location for which variance is requested
Taft Elementary School, Detroit
Name and address of employer
Douglas Steel Erection Company
Location for which variance is requested
Detroit Symphony Orch. Hall Expansion, Detroit
Name and address of employer
Johnson Steel Fabrication, Inc.
Location for which variance is requested
Dow Chemical Co, MI Operations, Midland
Name and address of employer
McGuire Steel Erection Inc.
Location for which variance is requested
MSU Animal Health Lab, Lansing
Name and address of employer
R & B Steel Company
Location for which variance is requested
Auto Owners Office Addition, Lansing
Name and address of employer
SCI/Steelcon, Inc.
Location for which variance is requested
Western Michigan University, Kalamazoo
Name and address of employer
Whaley Steel Corp.
Location for which variance is requested
CMU Health Professionals Bldg. Mt. Pleasant
Name and address of employer
Whitmore Steel Inc.
Location for which variance is requested
G M Powertrain, Pontiac
Ford Child Care, Ypsilanti
Schultz Elementary School, Detroit
WSU Welcome Center, Detroit

Part and rule number from which variance is requested
Part 32 - Aerial Lift Platforms - R408.43209, Rule 3209 (8)(b) & R408.43209, Rule 3209 (9)
Summary of employer's request for variance
To allow employer to firmly secure a scaffold plank to the top of the intermediate rail of the guardrail system of an aerial lift for limited use as a work platform provided certain stipulations are adhered to.
Name and address of employer
Applegate, Inc.
Location for which variance is requested
8521 Guinea Road, Lansing
Name and address of employer
Modern Mirror & Glass Co.
Location for which variance is requested
General Motors Technical Center, Warren
Name and address of employer
Motor City Electric Co.
Location for which variance is requested
General Motors Technical Center, Warren
Name and address of employer
Ventcon, Inc.
Location for which variance is requested
General Motors Technical Center, Warren ■

Proactive Partnering

Cont. from Page 1

be a key component of the agreement, and will help identify emerging issues in the automotive industry. This partnership represents a new strategy that will emphasize proactive measures to ensure a safe and healthy work environment. During the implementation of the partnership, MIOSHA will use both consultation and compliance staff.

"We believe this innovative coalition creates a new standard for public-private partnership and will help us achieve our mutual goal of continuous improvement of workplace safety for employees," said **Shamel Rushwin**, Ford Vice President, North American Business Operations. "To be truly successful, we believe our effort should be based on tangible results that translate into year over year improvements in injury and illness rates among our workforce."

"The welfare of our employees is a priority that we take very seriously," said **Frank Croskey**, Visteon Vice President, North America and Asia Operations. "We're excited to participate in this unique partnership with the UAW and MIOSHA because it will help us enhance the working environment for our employees."

First "State Plan" Partner

The MIOSHA program is one of 23 State Plan states. State Plans are OSHA-approved job safety and health programs that are operated by individual states and require standards and programs that are "at least as effective" as the federal OSHA programs.

From time to time, representatives from OSHA may participate in the MIOSHA meetings to help assure consistency with the UAW/Ford/Visteon federal OSHA partnership. MIOSHA representatives also serve on the federal OSHA partnership steering committee.

"We are proud to be the first State Plan to sign a partnership with the UAW, Ford and Visteon," said CIS Director **Kathy Wilbur**. "MIOSHA has been a leader in partnering with the private sector, and we believe this partnership can be a vital force to create a workplace environment at Ford and Visteon plants that fosters worker protection."

"This innovative agreement continues to recognize the respective rights and responsibilities of all parties. At the same time, it establishes a different context in which to enhance the workplace safety and health for Ford and Visteon employees," said BSR Director **Doug Earle**. "MIOSHA will be in a unique position to evaluate the impact of Ford and Visteon's safety and health programs."

Implementation Plan

The partnership was created by a **Steering Committee** represented by all partners. The partnership starts with the signing of the agreement and will be in effect until three years from the signing. Site-specific UAW, Ford, Visteon staff and MIOSHA staff will work together to identify, evaluate and control health and safety hazards–without expansive, labor-intensive MIOSHA inspections, followed by costly, adversarial appeals that result in limited safety and health improvements.

How does the partnership do that? It starts with an plan developed by the **MIOSHA Implementation Team** and approved by all partners. The partnership implementation focuses on an 11-point set of guidelines. The guidelines address hazards specific to the automotive industry and include: confined spaces, skilled trades hazards, maintenance vehicles, chemical safety, energy control and power lock out, ergonomics, noise control and hearing conservation, heat stress, powered material handling vehicles, machine guarding and personal protective equipment.

The MIOSHA Implementation Team: Jerry Swift, Gerry Dike, Bob Pawlowski, Connie O'Neill, Maryann Markham, Ayalew Kanno, and John Brennan. (Not pictured: Rick Odorico, Paul Wrzesinski, and Nella Davis-Ray.)

Each location covered under the agreement will conduct a MIOSHA Day meeting where MIOSHA representatives will meet with the plant manager, union chairperson and their leadership team. The meeting will include a review of the injury and illness reports, an overview of their safety and health progress, and an informal walk-through of the facility. A series of questions, verification steps, references and resources will be used to systematically evaluate each location's efforts.

Ford/Visteon disclosure of information like their injury and illness trends, followed by MIOSHA review and evaluation may lead to recommendations for correction and further MIOSHA monitoring. While all parties know that this full disclosure may cause some apprehension, the partners believe the results will be a safer and healthier environment at each location.

The partnership with MIOSHA also provides that Ford and Visteon may be asked to pilot and evaluate draft regulations for consideration by a MIOSHA standards commission. Elements of this agreement may serve as a model in the future to all businesses subject to MIOSHA regulations.

MIOSHA inspections to investigate employee complaints, serious injuries or fatalities, and national or state emphasis programs are not precluded by this agreement. Ford and Visteon plants selected for general schedule inspections from the MIOSHA Inspection Targeting list will receive a focused inspection. The focused inspection will include an evaluation of the inspection guidelines listed in the agreement. ■

Steering Committee

UAW
Gary Cox
UAW International Representative
UAW National Ford Department
National Joint Committee on Health and Safety

Ford
Harry Tarrant
Manager, Safety, Security and Fire Protection
Vehicle Operations

Visteon
Roland Jagutis
Global Safety Manager
Visteon Corporation

MIOSHA
Douglas Earle
Director
CIS Bureau of Safety & Regulation

Douglas Kalinowski
Deputy Director
CIS Bureau of Safety & Regulation

Ergonomics

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lating arms may be advantageous over hoists because they can be used to reach in and around workplace obstructions. They can be mounted at a fixed location or on a track to follow a production line, and they can be used to control torque forces transmitted to the worker.

The **balance of a work object** can be used to minimize the amount of force a worker must exert to hold or use that work object. For example, greater force is needed to cut with the tip of a long blade than with the tip of a short blade, and greater muscle effort is required to stabilize the wrist and hand when the tool airline droops over the edge of the work bench than when the tool is supported overhead at the center of gravity.

Handle size and design also affect force requirements. The placement, stability, orientation, balance, and edges of handles can be designed to minimize force requirements. The tendency of a tool to twist in the hand may be caused by its torquing action on turn-to-tighten fasteners. These reaction forces may be reduced by lowering the speed or torque setting of the tool, lengthening the handle of the tool, or using a torque-reaction bar. A task analysis is required to determine the best solution for a given tool and situation.

The use of **gloves** should be reviewed to be sure that they fit well to minimize the strength required for a given job. In some cases where only palm protection is required, it may be possible to remove the fingers from the gloves. In other cases where only finger protection is required, it may be possible to protect the fingers with tape. Tests should be performed to determine the best gloves for a given task.

Force requirements may also be affected by **quality control**. Poor quality control may result in size differences among parts, which require extra effort to put them together. Examples of this often are seen in mechanical assembly and upholstery operations. **Maintenance** also may affect the force required to use cutting and finishing tools such as knives, scissors, sanders, and screwdrivers.

Contact Stresses

Contact stresses are produced when soft tissues are squeezed between bone and external objects, such as tools, parts, and the work station. The magnitude of these stresses is related to the contact force and the area of contact.

Common examples of contact stress include: pounding objects with the palm; tools or other work objects digging into the base of the palm; resting the arms, hands or elbows on hard or sharp work surfaces; and using tools such as scissors that rub on the sides of the fingers.

Contact stresses are identified by inspection of the work elements. Any element that entails the exertion of force involves the risk of a contact stress. Contact stresses also may result from bumping or resting on objects in the work area.

Controlling Contact Stresses

Control measures for contact stresses include: enlarging handles; rounding or padding edges of handles, benches or other work surfaces; using compliant handle materials; using tools for pounding; and padding the hand.

As a general rule, handles should be as large as possible for a given task, have well-rounded corners, and be covered with compliant rubber or plastic. Handles should be long enough to distribute the forces over the muscular eminences at the base of the thumb and little finger. Contact stresses on the sides, as well as the backs, of the fingers can be controlled by using straight, plastic-coated handles with a spring-opening device.

In some cases, hammers or other percussive tools can be used to eliminate contact stresses produced by pounding with the hand. In other cases, pads may be used to cushion these stresses, but care should be exercised not to interfere with grasping.

Specific Postures

Any work posture can be stressful if it is maintained long enough. Consequently, flexibility and adjustability in work station design can provide workers with the opportunity to change postures throughout the work shift.

Stressful postures can be identified by watching workers perform the job. The postural analysis can be facilitated by films or videotapes that can be replayed in slow motion. Observations may be documented through the use of a checklist to record the occurrence of stressful postures. Computers can be used to facilitate the recording and reporting of different postures.

In addition, goniometers can be used to identify and record stressful postures. Electrogoniometers can be attached to the body joint of interest–with an amplifier, analog-to-digital converter, and computer to record and analyze the data. Changes in posture can be monitored and stored on the computer while the worker performs normal work tasks.

Psychophysics also can be used to determine preferred work combinations. In one study workers used comfort ratings to determine preferred work locations for using hand tools in the trim department of an automobile assembly plant.

Eliminating Stressful Postures

Work location and orientation can be changed to reduce or eliminate stressful postures. For example, using a pistol-shaped tool on a horizontal surface positioned at elbow height creates an elevated elbow and ulnar wrist deviation. That same tool can be used on a vertical work surface near elbow height with no posture stress. Working above shoulder height creates posture stress; work heights can be altered by positioning the worker on a platform or reducing the level of work objects to eliminate or minimize the posture stress.

Tool design can be used as an effective way to control posture stress. One of the greatest differences between modern tools and tools of the past is that tools of the past usually were made or purchased by the person using them. Consequently, much attention was given to the size and shape. Today, tools are specified by an engineer, ordered by a purchasing agent, and supplied by a tool room attendant–the users may be completely left out of the process.

Stick figures and manikin templates can be used to estimate the best work location for a person of given stature performing a specific task. They also can be used to determine the range of adjustability that may be needed to accommodate workers of varying stature at a specific work station.

Manipulations are more easily performed using computer-aided drafting (CAD) systems. CAD systems provide the ability to create engineering drawings that can be and recalled for editing or plotting. Recent advances in microcomputer hardware and software have resulted in widespread availability of inexpensive systems that do not require extensive experience.

Vibration

Another frequently reported factor in MSDs that deserves mention is vibration. Causes of vibration include holding a part in contact with a power or impact tool, holding a power tool, holding a control, and pounding. Unless vibration is of high intensity or exposure is continuous, it may be of secondary importance after repetitiveness, forcefulness, contact stress, posture, and low temperature. The job analysis should serve to put these factors into proper perspective. Where problems exist, exposure should be minimized.

Temperature

Substantial data document the sensory, motor, and circulatory impairments caused by exposure to low temperatures between 0° and 20° C. These impairments have two effects: to reduce manual dexterity and to accentuate the symptoms of a nerve impairment. The fingers are particularly vulnerable, and may be cooled as a result of low environmental temperatures, handling of cold materials, or exposure to cold exhaust from air-powered tools. There are no standards for finger temperatures, but it is recommended that they be kept above 25° C. Finger temperature can be increased by using gloves, constructing handles from materials with low thermal conductivity, directing exhaust air away from the worker, and wearing additional garments on the torso.

Evaluation of Interventions

Although there are no absolute standards for exposure to repetitiveness, forcefulness, contact stresses, postures, vibration, and tempera-

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Ergonomics

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tures–common sense dictates that they should be minimized whenever possible.

In addition, the American Conference of Governmental Industrial Hygienists (ACGIH) has developed a Threshold Limit Value (TLV) for mono-task hand work and prevention of work-related MSDs. This TLV considers the risk factors of hand activity level (HAL) and peak finger force. Information on this TLV can be found at http://www.acgih.org and http://umrerc.engin.umich.edu/jobdatabase/RERC2/HAL/ACGIHTLV.htm.

Currently, there are insufficient data to predict the effect of changing any one of the ergonomic factors cited in the development of MSDs. The occurrence of more than one factor in a work situation further complicates intervention strategies.

For example, a job may be repetitive and forceful and involve occasional postural stresses and exposure to vibrations. Although reducing any one of these stresses should reduce risk of MSDs, the amount of risk and its significance is difficult to predict. For these reasons any work changes to control disorders must be evaluated. Several iterations may be required to achieve the desired level of control.

Job Analysis

The first step in evaluating interventions is workplace documentation and assessment of the risk factors associated with MSDs. This may be performed using the drawing board, mock-ups, and prototypes.

User Feedback

The second step is obtaining user feedback. Both new and experienced workers should be asked to try the new design. In both cases the workers should be trained in how to adjust and operate the new equipment. Workers should be observed and interviewed. A formal interview should be conducted to obtain feedback about each design feature.

Implementation of New Equipment

The third step is the implementation of new equipment. All new users should be trained in how to adjust and operate the equipment. They should then be observed and interviewed. The interviews should be repeated at frequent intervals initially and at longer intervals later to detect any symptoms of chronic muscle, tendon, or nerve disorders.

Medical Surveillance

Finally, ongoing medical surveillance should be used to determine whether there has been a change in the incidence rates of injuries and illnesses on the jobs where interventions have been implemented versus other jobs in the plant. Control of MSDs requires an ongoing effort and may require several attempts to determine effective interventions. ■

U.P. Safety Conference

More than 200 professionals from across the Upper Peninsula gathered Jan. 31, for the second annual U.P. Safety Conference held at the M-TEC at Bay College in Escanaba.

The conference focused on such issues as: safety in food handling, behavioral safety, an occupational health review, construction safety applications, noise and hearing conservation, the MIOSHA rule making process, and an in-depth session on ergonomics.

Keynote speaker MIOSHA Director **Doug Earle** discussed the new MIOSHA recordkeeping system. MIOSHA has revised the recordkeeping standard, in accordance with federal OSHA recordkeeping revisions, to provide clearer regulatory requirements which will simplify the overall recordkeeping system for employers. The revised MIOSHA rule, Part 11. Recording and Reporting of Occupational Injuries and Illnesses, went into effect Jan. 1, 2002.

"Recordkeeping is an important part of a company's total safety and health plan," said Earle. "Conscientious and detailed records are a valuable tool for the employer or employees to help recognize patterns of accidents or illnesses, and most importantly, to take preventative actions for a safer and healthier workplace."

Also as part of the conference, **Jim Dougovito**, a contract employee working for the M-TEC, was honored with the Forest Resource Association's **H.R. Jefferson Safety Award** for the Great Lakes Region. The award was presented in recognition of Dougovito's efforts in safety education.

"We're so pleased with the success of this year's event," said Jayne Bernard, Director of Safety Training at the M-TEC. "Several major employers from across the U.P. sponsored groups of employees, recognizing the importance of investing in safety and health education to reduce on-the-job injuries and associated workers compensation costs."

Bernard noted attendees were very appreciative of the number of qualified presenters at the conference, and at M-TEC's ability to offer such high-quality programs. The M-TEC offers customized, on-site training for a variety of topics. Past programs have included fall protection, confined space training and efforts to reduce hearing loss in the workplace.

For more information about safety programs offered by M-TEC at Bay College, contact Bernard at 906.786.5802, ext. 1510. ■

Keynote speaker MIOSHA Director Doug Earle discussed the new MIOSHA recordkeeping system, which went into effect Jan 1, 2002.

MIOSHA Spanish Language Publications

Two MIOSHA publications are now available in Spanish, and will provide Spanish-speaking workers and employers with vital workplace safety and health information.

The **MIOSHA poster** is required to be posted in all businesses covered by MIOSHA regulations. It describes many important provisions of the MIOSHA Act.

The **"Your Rights & Responsibilities under MIOSHA" brochure** covers the rights and responsibilities for both employers and employees, as set forth by the MIOSHA Act.

To order, please contact the CET Division at 517.322.1809.

How To Contact Us

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MI SHA news

Consumer & Industry Services
Bureau of Safety & Regulation
Director: Douglas R. Earle

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